



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,170	09/11/2003	Richard A. Holl	58035-013100	7505
33717	7590	04/27/2006		
GREENBERG TRAUIG LLP 2450 COLORADO AVENUE, SUITE 400E SANTA MONICA, CA 90404			EXAMINER SOOHOO, TONY GLEN	
			ART UNIT 1723	PAPER NUMBER
DATE MAILED: 04/27/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/661,170

Applicant(s)

HOLL, RICHARD A.

Examiner

Tony G. Soohoo

Art Unit

1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

New pending claims as entered upon the filing of the RCE application are claims 18-20.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 18 and 20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification fails to teach a combination of operation in a method whereby there are "two closely spaced stationary surfaces", claim 18, line 4 which also has the formation of boundary layers upon "relative movement of the surfaces", claim 18, line 11; claim 20, lines 4, and lines 11. One can not resolve the statement that the surfaces are "stationary" and may also have an operation of "relative movement of the surfaces".

3. Claim 18 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention. One can not resolve the meets and bounds of the scope defined by the statement that the surfaces are “stationary” and may also have an operation of “relative movement of the surfaces”.

Claim 18 also appears to state that all of the components (1st material, 2nd material, and resultant material) form respective (i.e. each) boundary layer(s) upon both surfaces of the two spaced surfaces, lines 9-11; and claim 20, lines 9-11. Does this define that the 1st, 2nd, and resultant boundary layers whole overlap one another so as to form against both surfaces? However the claim states a back to back radial thickness which suggests that the boundary layers do not lay against both surfaces.

Claim 18 states a radial spacing, line 12, and claim 20, line 12, however does not state any positive geometry which has an arcuate surface in which a radial vector may be constructed. The claim is unclear where is the vertex of the radial vector in measuring the radial thickness. Is this a curved boundary layer, or merely a thickness of the boundary layer.

The scope of the “flow rates” of line 16-17 (of both claim 18 and claim 20) is unclear to produce the recited effect of “subjected to laminar shear” since any laminar flow with a velocity profile in a channel would have a differential shear when measured between the wall of the channel and that of the center of the channel (i.e. the maximum laminar flow velocity at the center of the channel in comparison to the boundary wall flow of near zero in the boundary layer), thus it appears that this is true of any laminar shear flow. Absent any positive language of a numerical or formula of the determination of the flow rate, it is deemed that all laminar flow satisfies the lines 16-17, and thereby

applicant has failed to particularly point out subject matter in which applicant regards as the invention.

Claim interpretation

4. The term high-shear mixing is a relative term and is broad in scope without particular numerical limitation measurements positively recited in the claim.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

.(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claim 19 is rejected under 35 U.S.C. 102(e) as anticipated by Horner et al 2003/0048694.

Horner discloses a device with inlets which provides a laminar flow state for diffusion mixing of the layers. See especially paragraph [0004].

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 19 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Yager et al 5716852.

The Yager (et al) '852 reference teaches a mixing device structure which may fully operate in the provision of fluids which may interdiffuse in a channel 100, column 7, lines 54-61. The term interdiffusion is read to encompass the intermingling of components of one material into the other in the same manner as defined by applicant that "interdiffusion" is deemed as "applicant's definition of mixing" of the two material flows. The Yager '852 reference discloses an inlet and pump means 20, 30, which may also supply fluids in any mass flow or velocity, column 6, lines 7-9, column 11, lines 62-65 to effect the diffusion intermingling effects. Thus the Yager ('852) reference anticipates the structural elements required in the claim and provides means which may be operated to perform the recited effects in the claim provided by the structure.

Additionally with regards to the material used in the device and the effect of boundary layers or reactions. Such recitation does not limit the device structurally, but merely directed to the intended use of the device of the material in which it is worked upon. Furthermore, one may place any fluid in this structural device, and is capable of accepting such a fluid, in which may have a corresponding viscosity and Reynolds number thereby which would form respective boundary layers and reaction reactant components and the structure is fully capable to operate as such.

Alternately, should any patentable weight be given to the means supplying in the recitation of lines 18-20 of the "wherein" phrase, the recitation of the manner of supplying by the means to produce a recited effect of "subjected to laminar shear", it is noted that since any laminar flow would have a velocity profile in a channel and would have would have a differential shear when measured between the wall boundary of the channel and that of the center of the channel (i.e. the maximum laminar flow velocity at the center of the channel in comparison to the boundary wall flow of near zero velocity in the boundary layer), thus it appears that this is true of any laminar shear flow. Absent any positive language of a numerical or formula of the determination of the flow rate, it is deemed that all laminar flow satisfies the lines 16-17, and thereby applicant has failed to particularly point out subject matter in which applicant regards as the invention, nonetheless, it is deemed that it would have been obvious to one of ordinary skill in the art to operate the pumping and velocity of the flows to produce a desired effect as suggested by Yager column 11, lines 62-65 to optimize the effect the diffusion intermingling effects.

Double Patenting

9. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

10. Claims 18 and 20 are rejected on the ground of nonstatutory double patenting over claims 1-8 of U. S. Patent No. 6471392 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows: The claim provides for passing of materials, thus it provides at least 1st and 2nd materials with a flow path between two spaced surfaces and whereby there is a relative movement of the surfaces whereby the material forms boundary layers on both sides of the surfaces and there are laminar flow stream or laminar circulation which would inherently provides laminar shear and interdiffusion effects there between.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Response to Arguments

11. Applicant's arguments with respect to new claims 18-20 have been considered but are moot in view of the new ground(s) of rejection.


Conclusion

12. The prior art made of record previously and not relied upon was cited as being considered pertinent to applicant's disclosure. US patent numbers: 6723999 to Holl, and 67242774 to Holl, and 6159739 to Weigl et al .

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony G. Soohoo whose telephone number is (571) 272 1147. The examiner can normally be reached on 7-5PM,Tue-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker can be reached on 571-272-1151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Tony G Soohoo
Primary Examiner
Art Unit 1723